

FIG.1

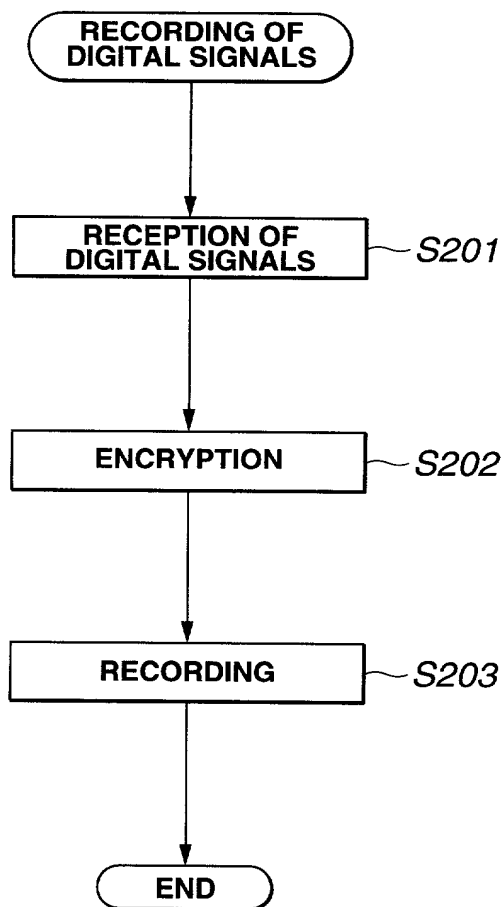


FIG.2A

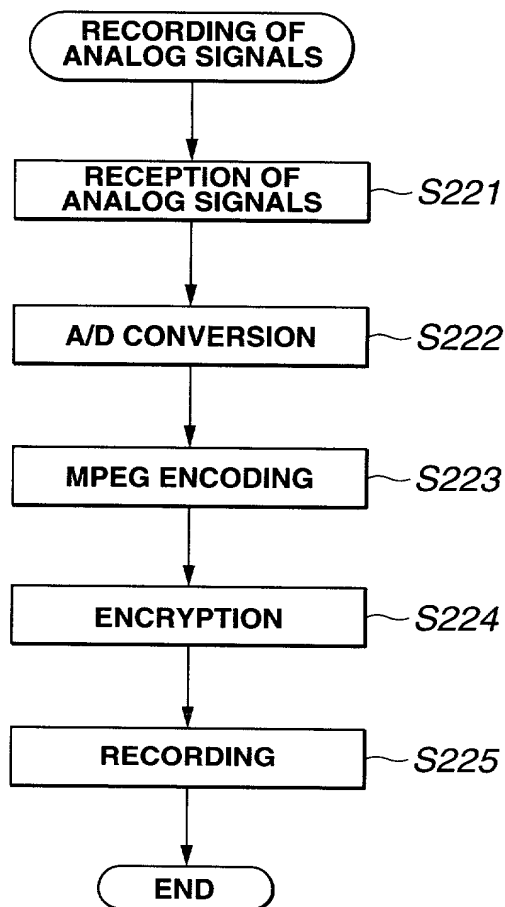


FIG.2B

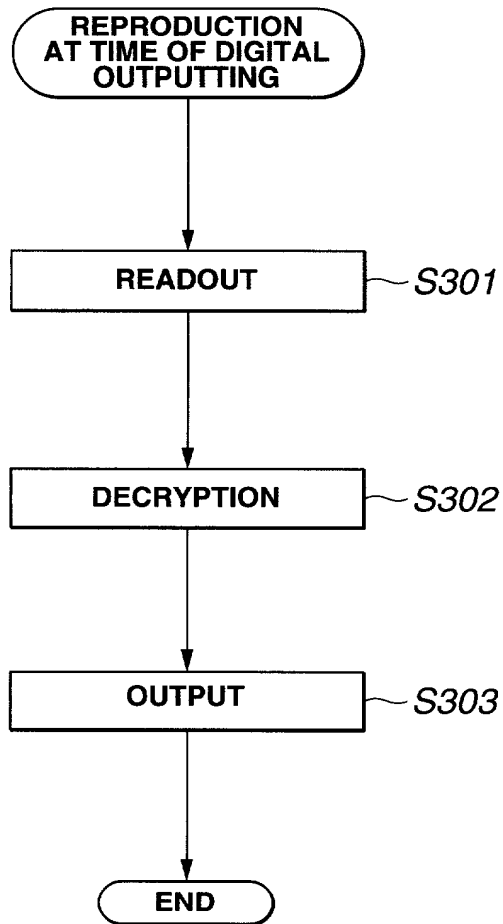


FIG.3A

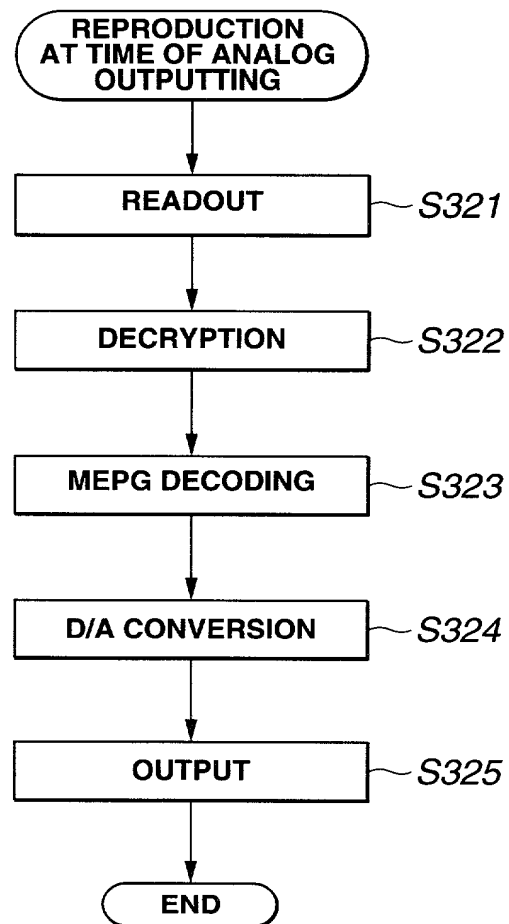


FIG.3B

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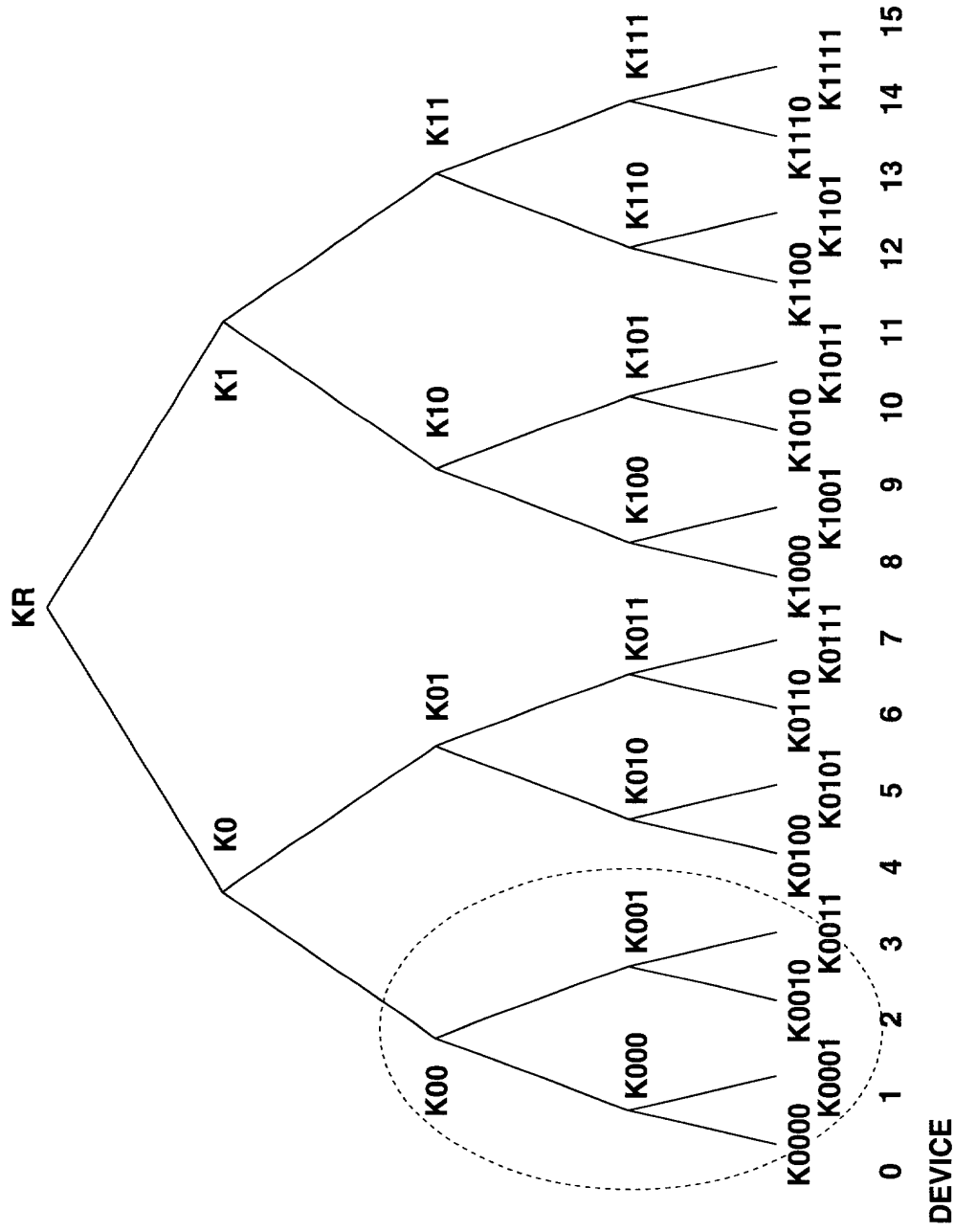


FIG.4

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**KRB : Key Renewal Block INSTANCE 1**  
**SEND ROOT KEY  $K(t)R$  AT TIME  $t$  TO DEVICES 0, 1, 2**

GENERATION : $t$	
INDEX	ENCRYPTED KEY
0	$\text{Enc}(K(t)0, K(t)R)$
00	$\text{Enc}(K(t)00, K(t)0)$
000	$\text{Enc}(K000, K(t)00)$
001	$\text{Enc}(K(t)001, K(t)00)$
0010	$\text{Enc}(K0010, K(t)001)$

**FIG.5A**

**KRB : Key Renewal Block INSTANCE 2**  
**SEND ROOT KEY  $K(t)R$  AT TIME  $t$  TO DEVICES 0, 1, 2**

GENERATION : $t$	
INDEX	ENCRYPTED KEY
000	$\text{Enc}(K000, K(t)00)$
001	$\text{Enc}(K(t)001, K(t)00)$
0010	$\text{Enc}(K0010, K(t)001)$

**FIG.5B**

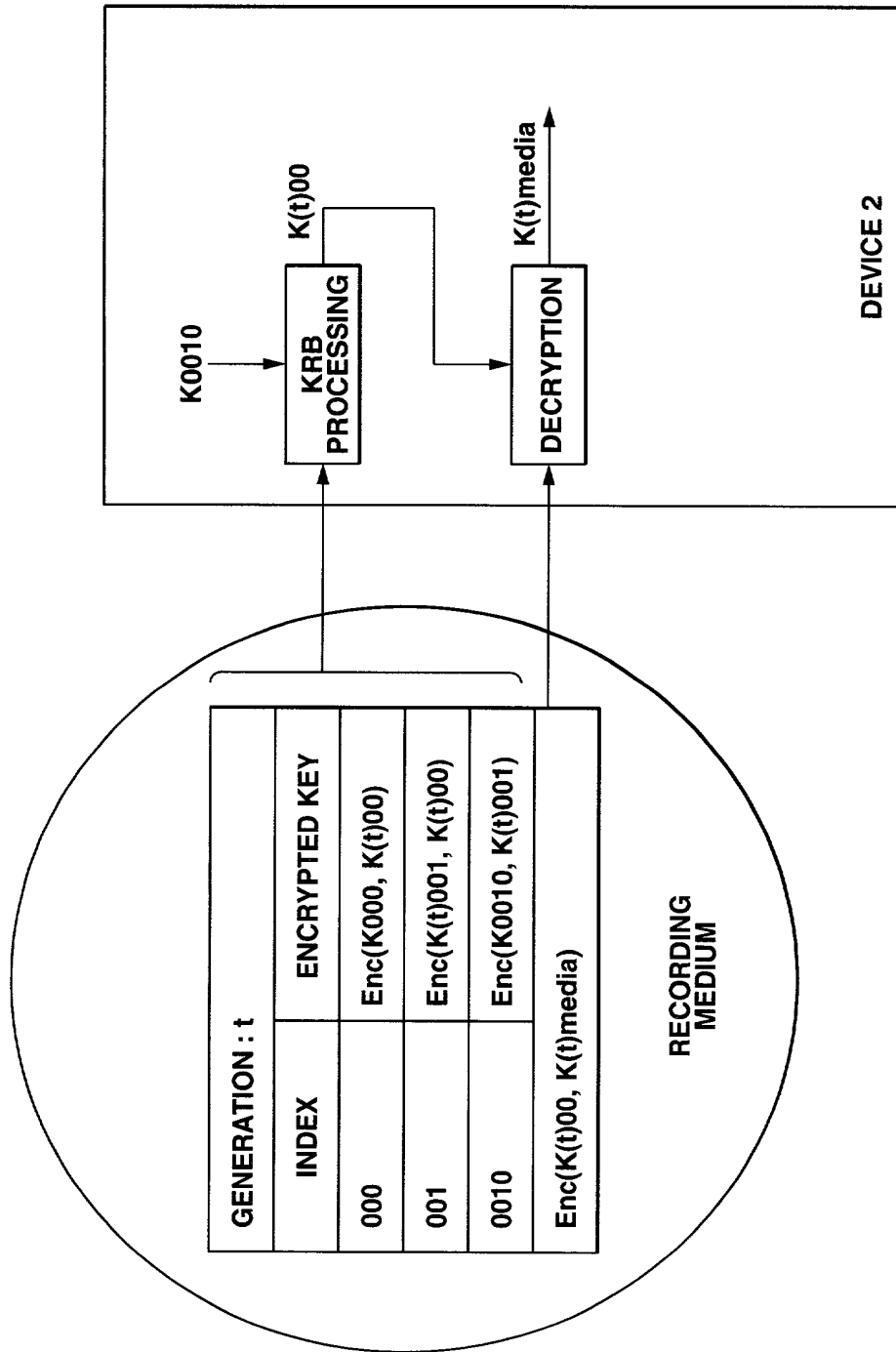


FIG.6

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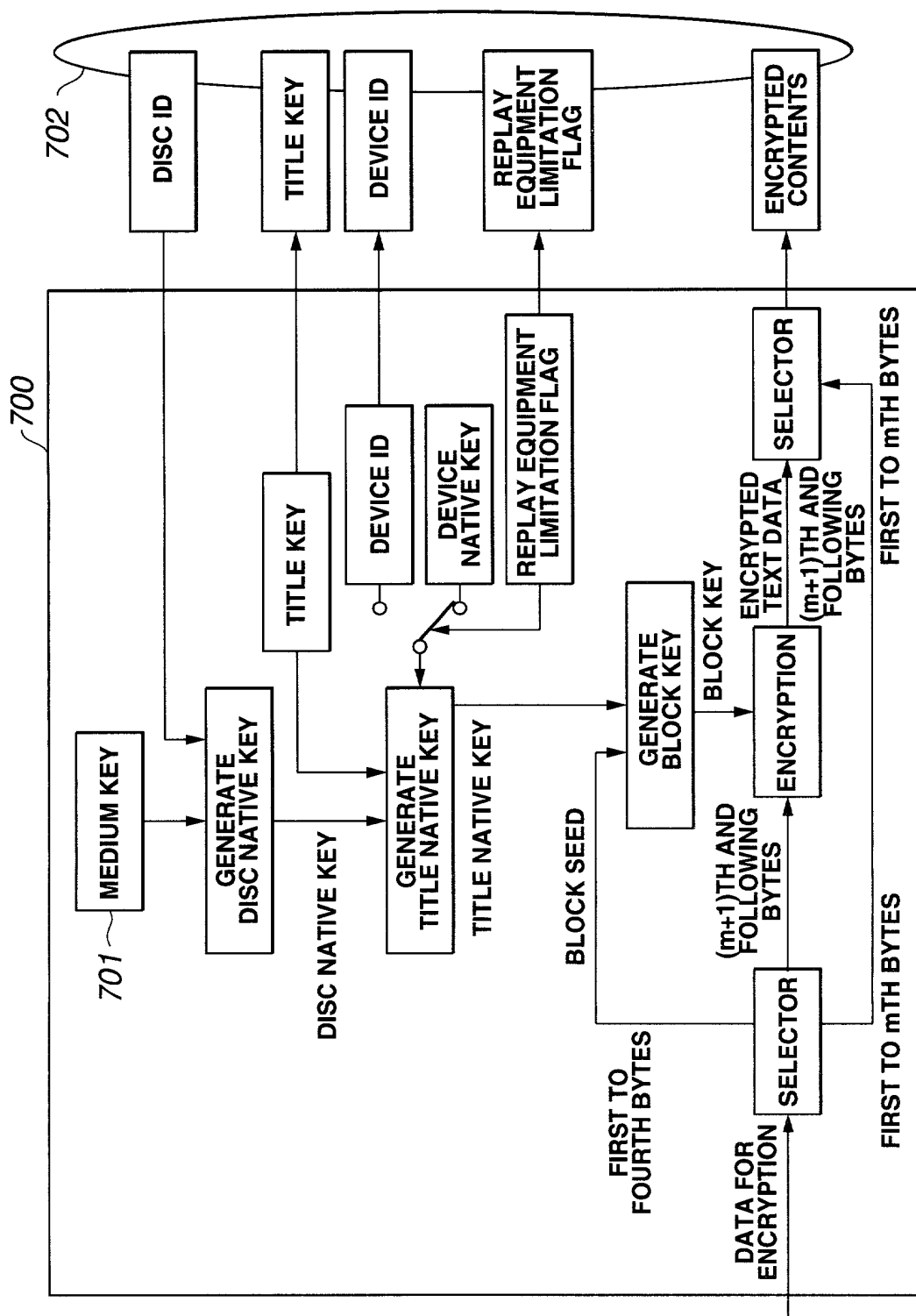
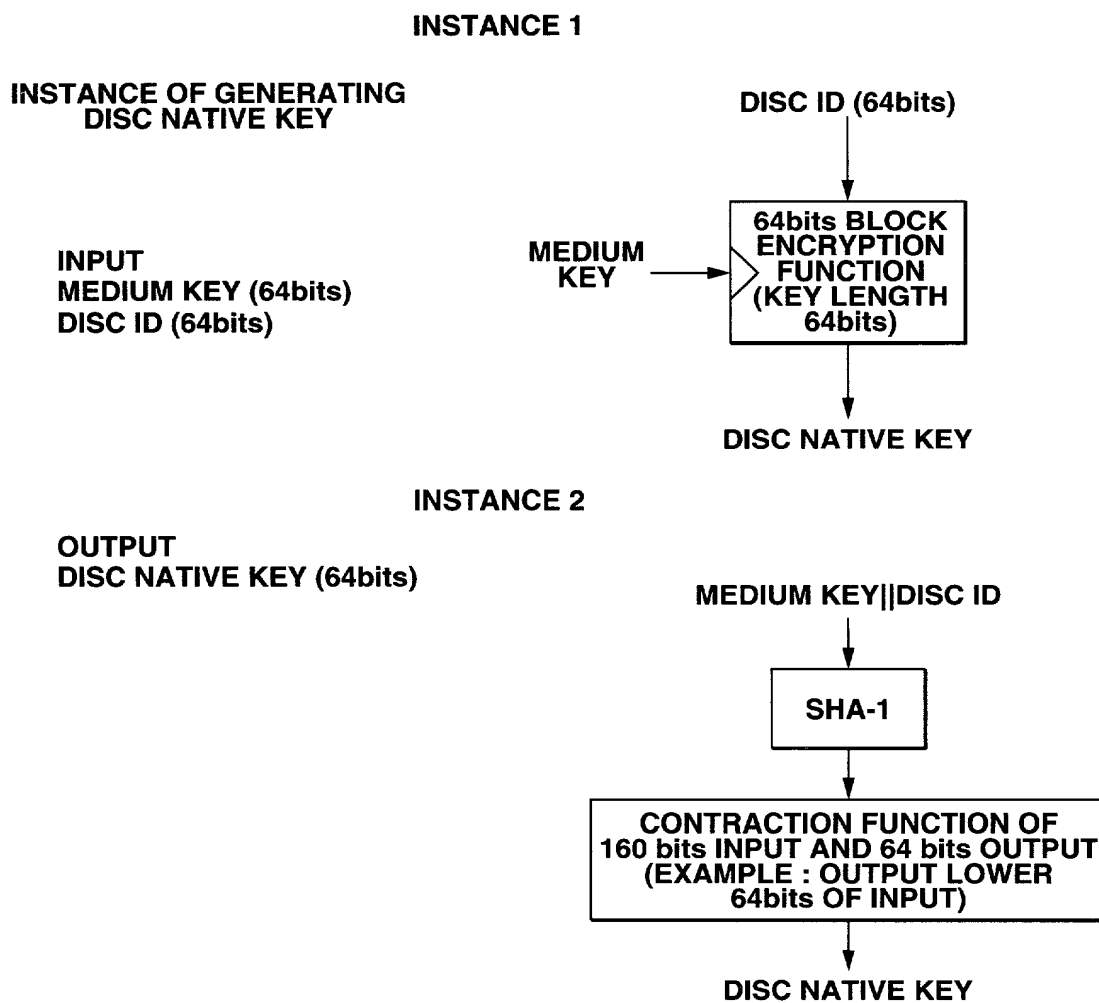


FIG.7

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**FIG.8**



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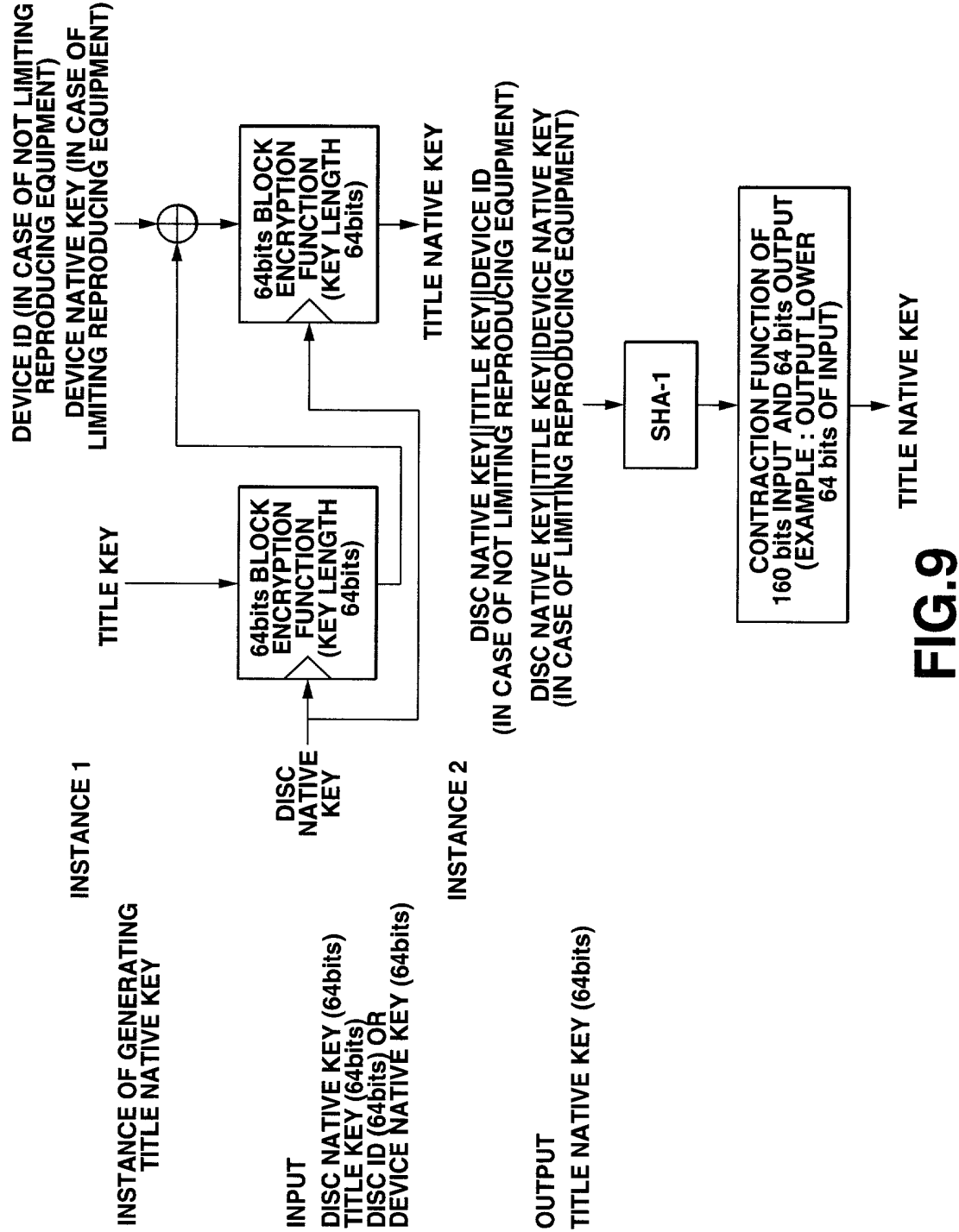
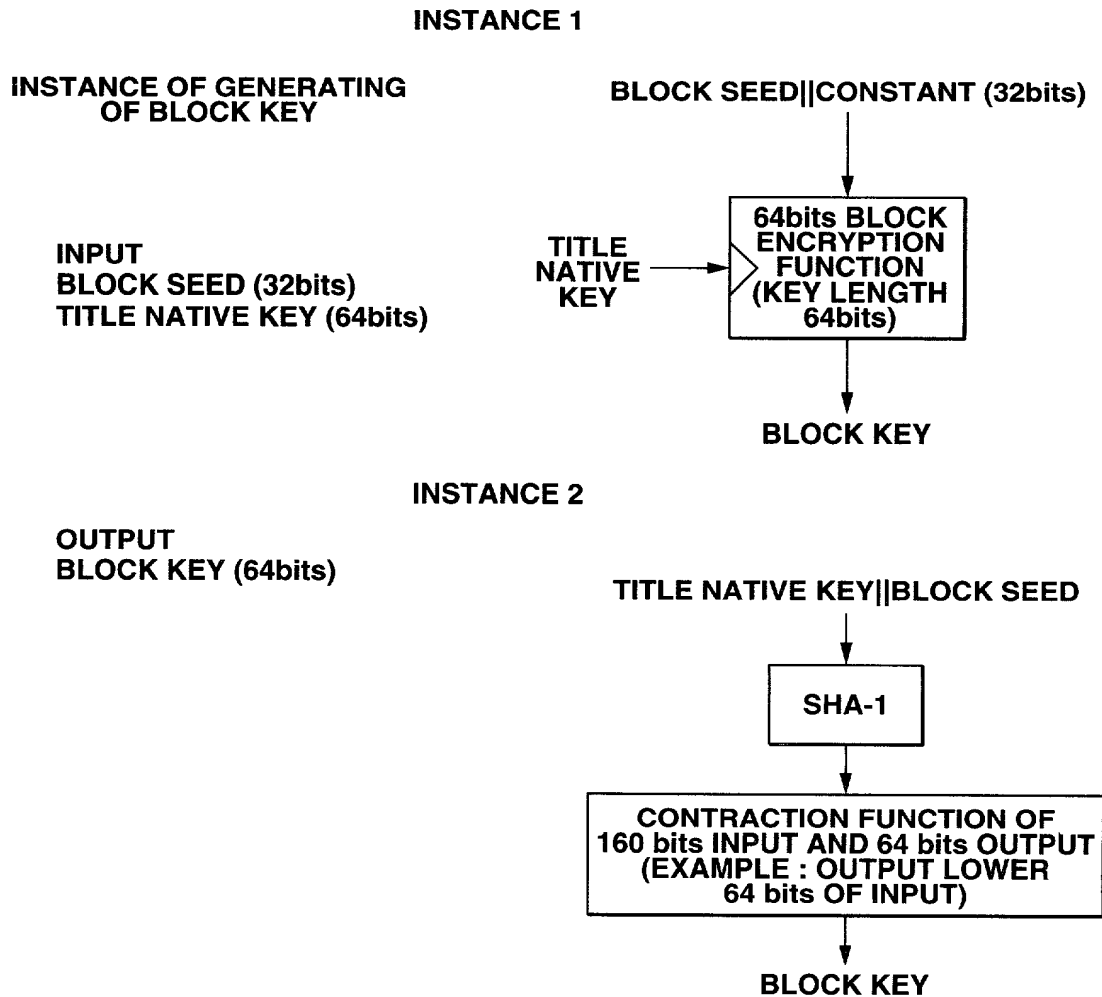


FIG.9

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**FIG.10**

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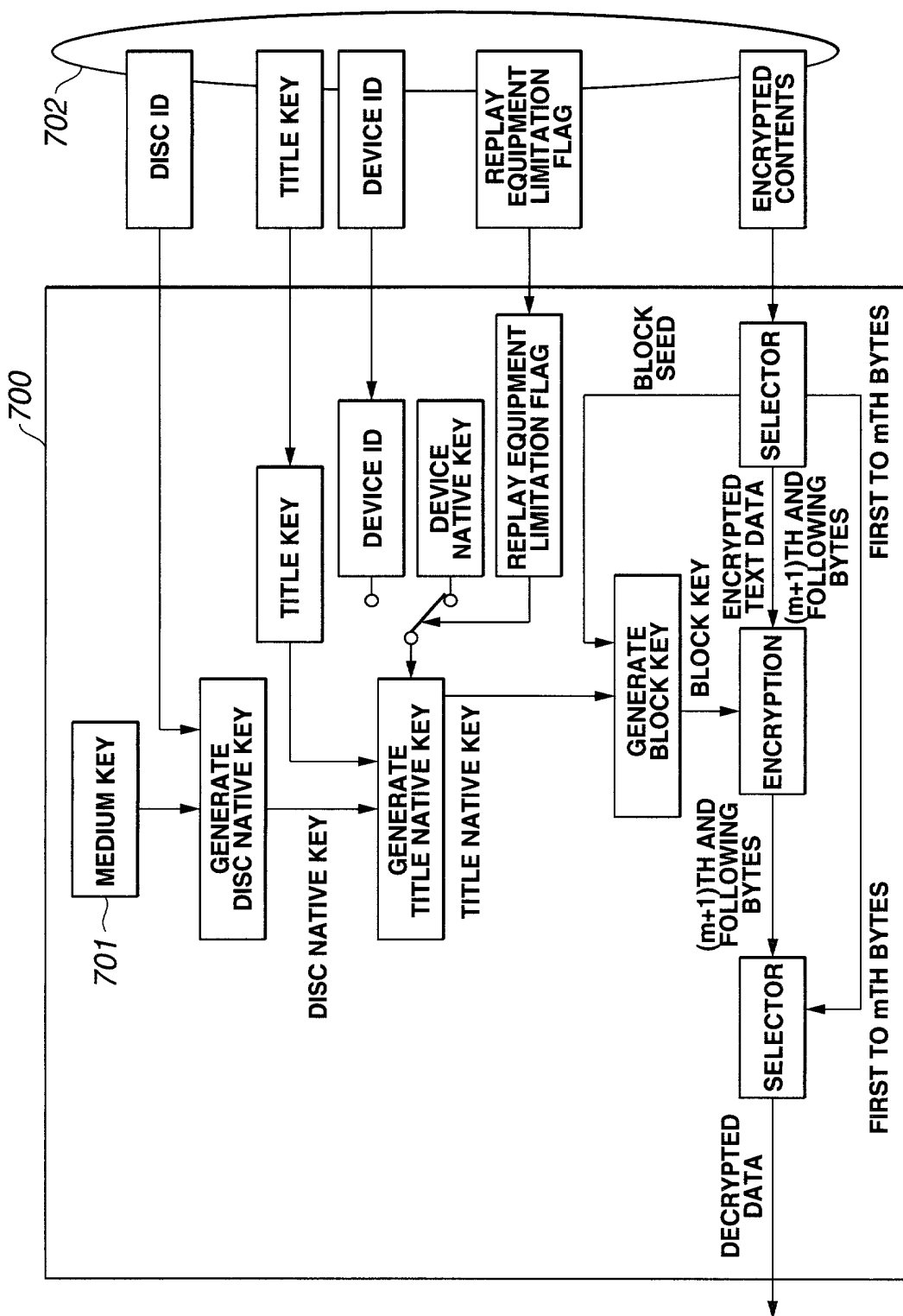


FIG.11

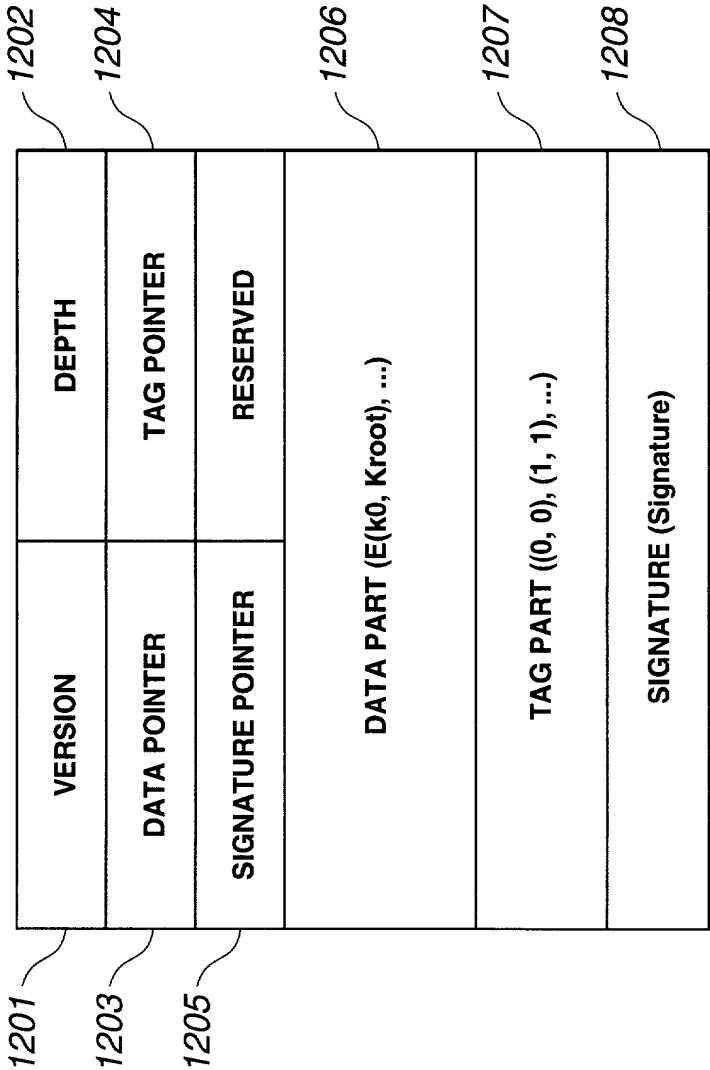


FIG.12

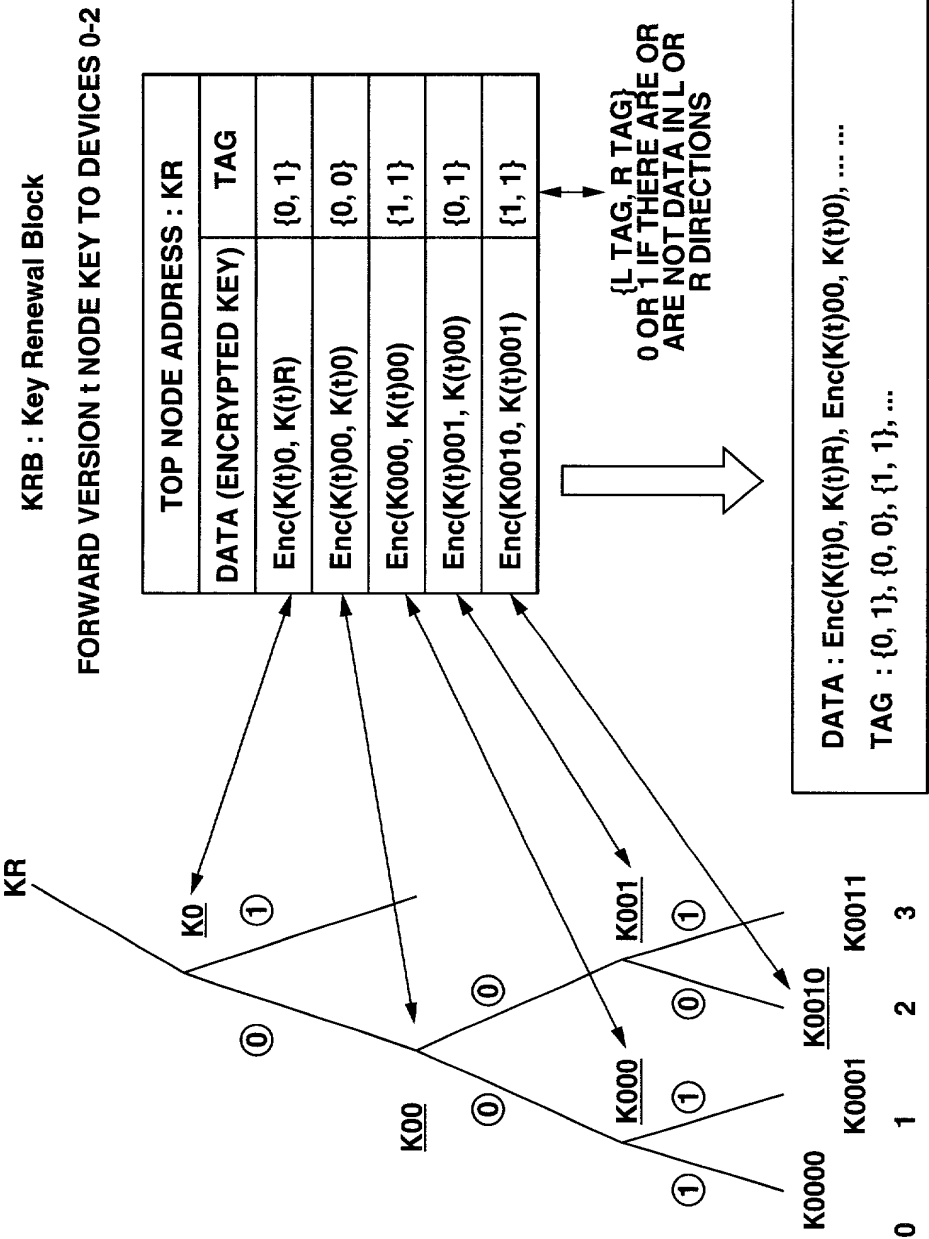


FIG.13

FIG.14A

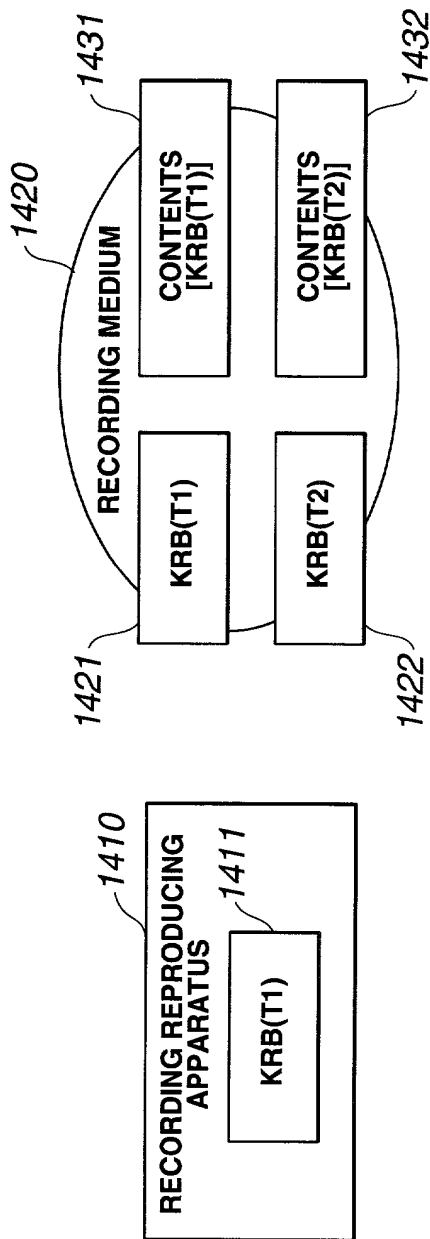
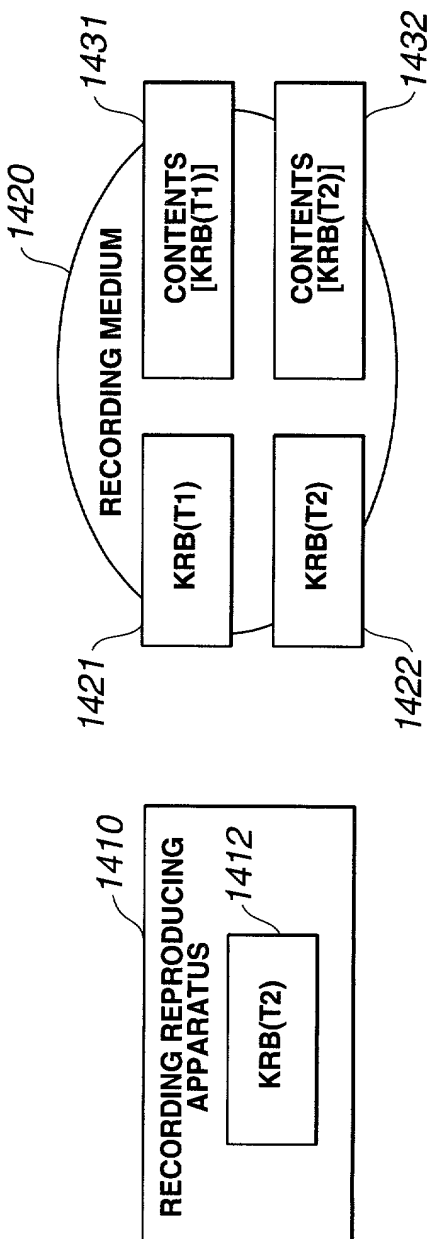


FIG.14B



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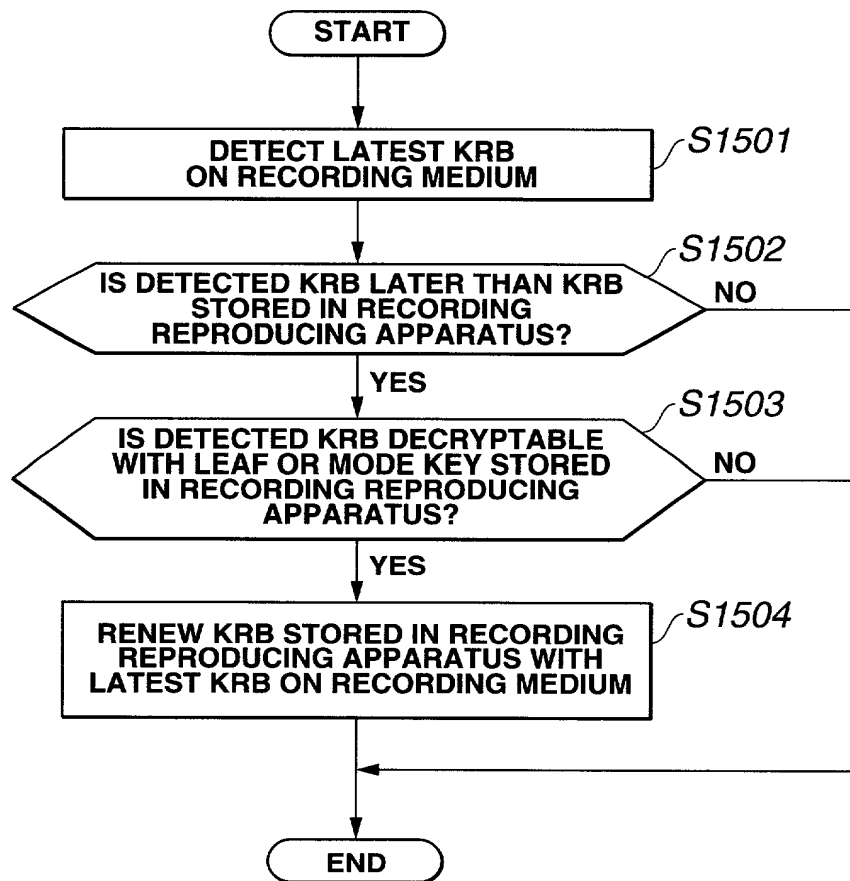
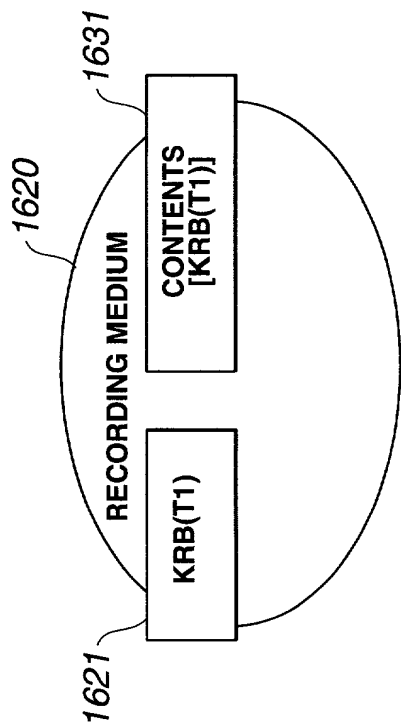
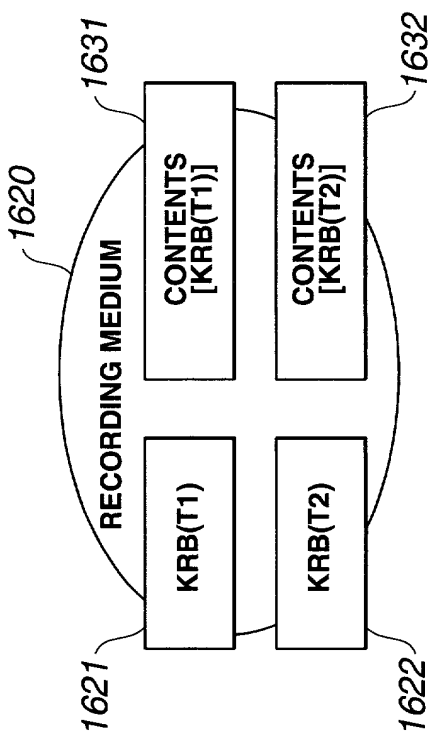


FIG.15



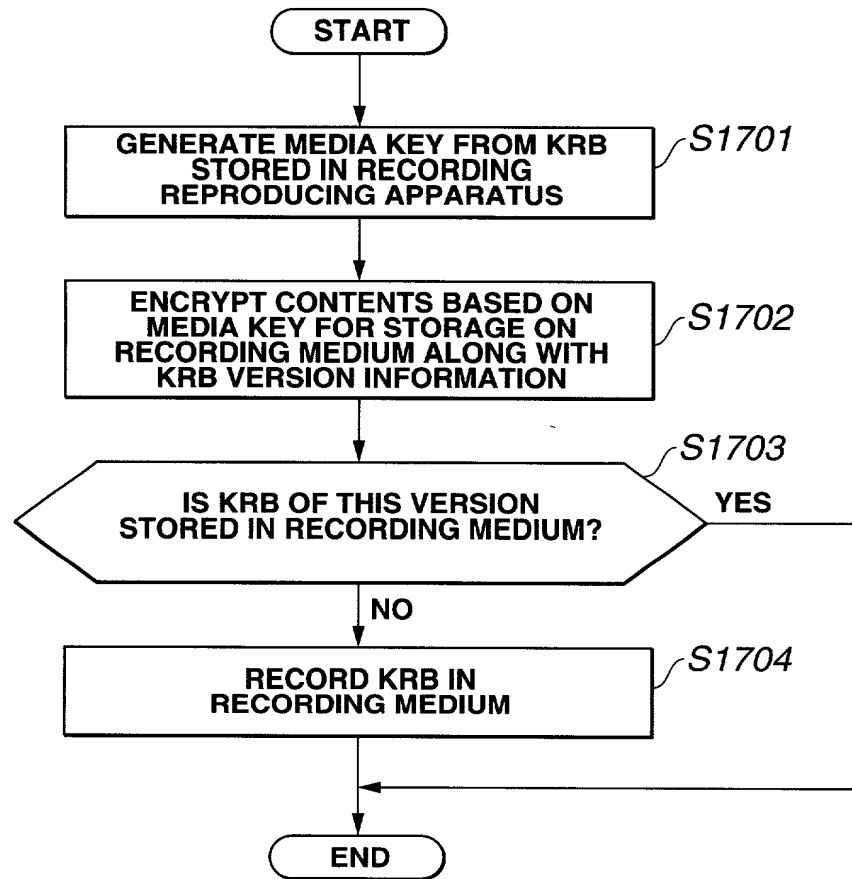
**FIG. 16A**



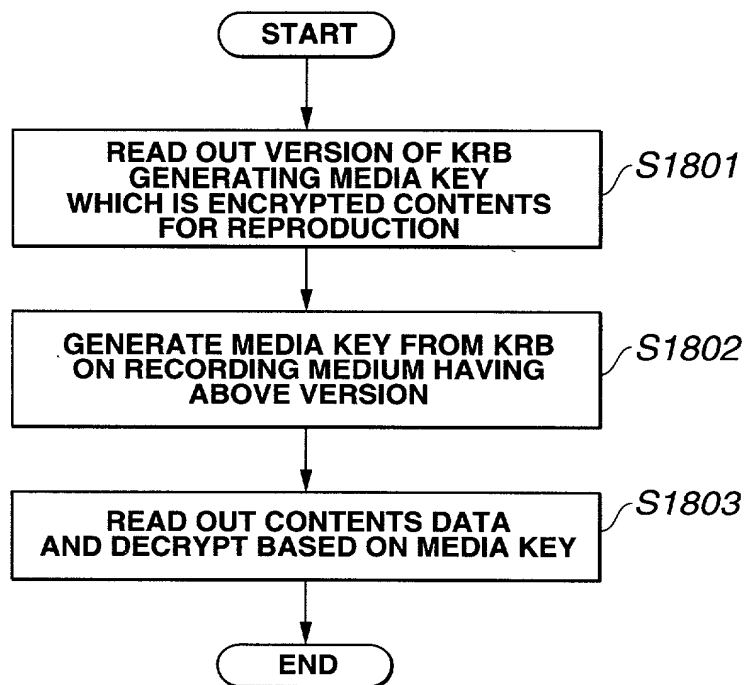
**FIG. 16B**



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**FIG.17**

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**FIG.18**

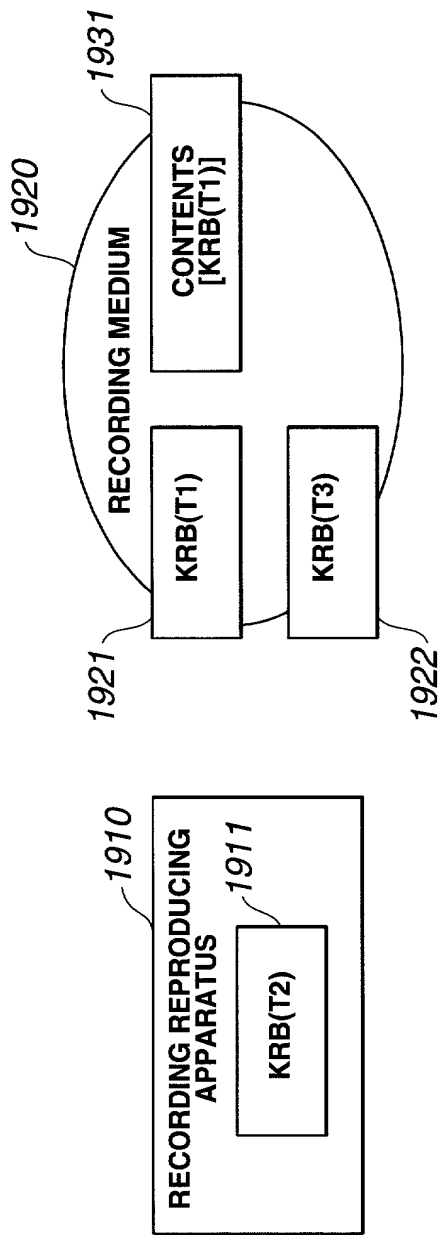


FIG. 19A

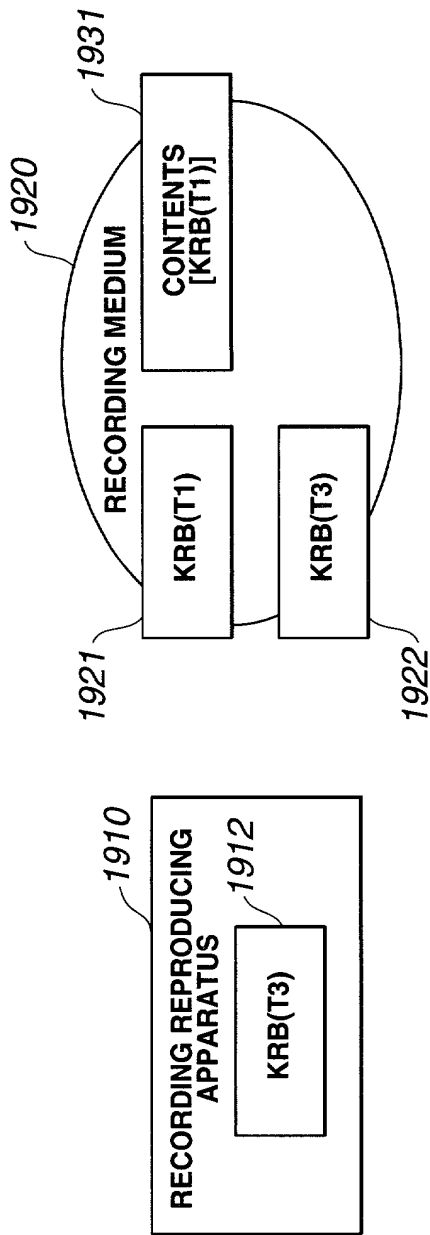


FIG. 19B

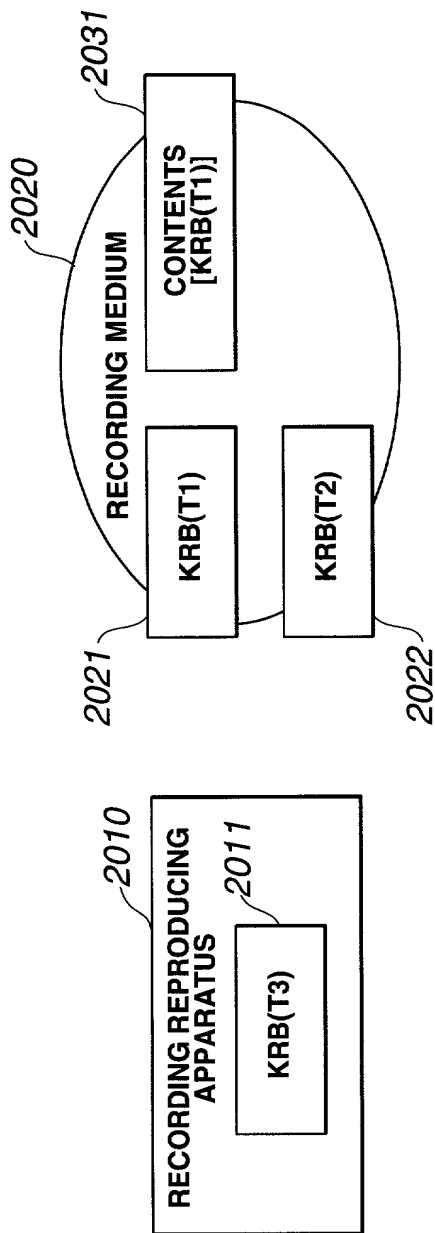


FIG.20A

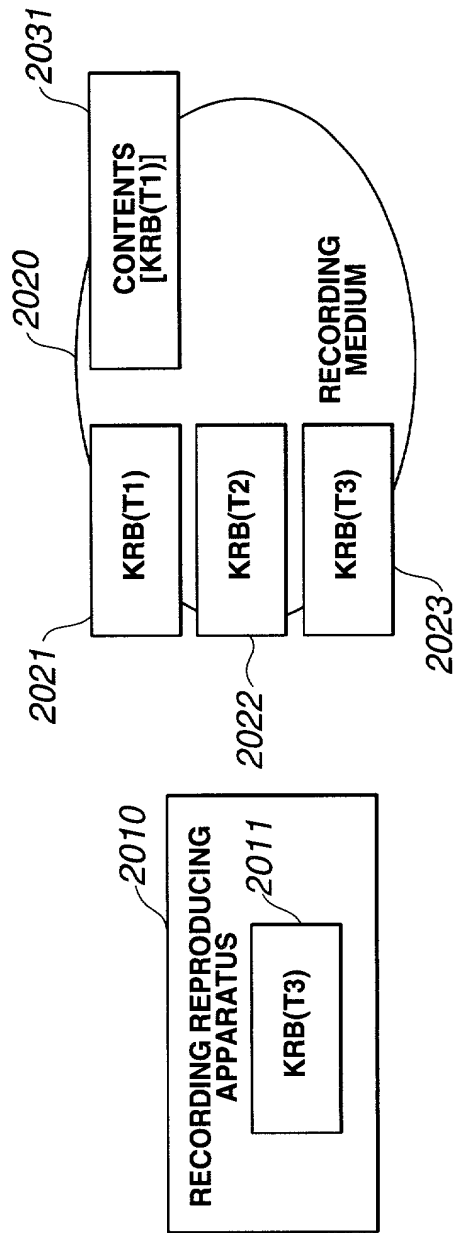


FIG.20B

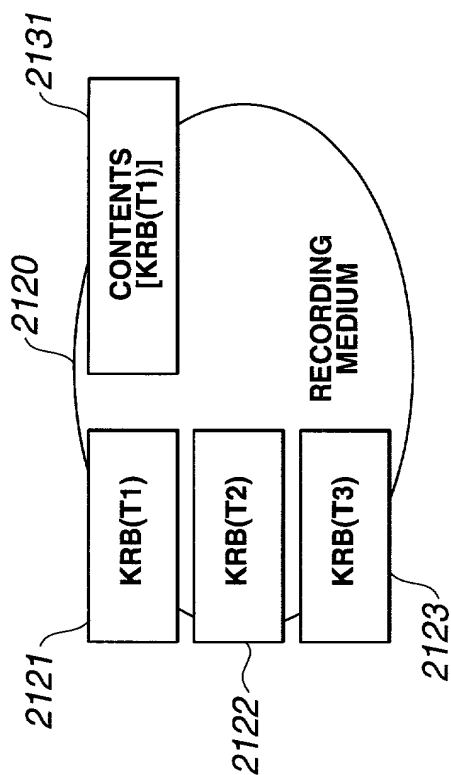


FIG.21A

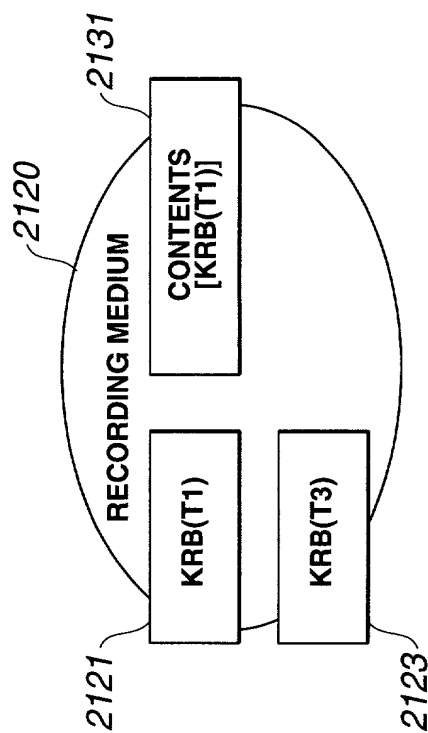


FIG.21B

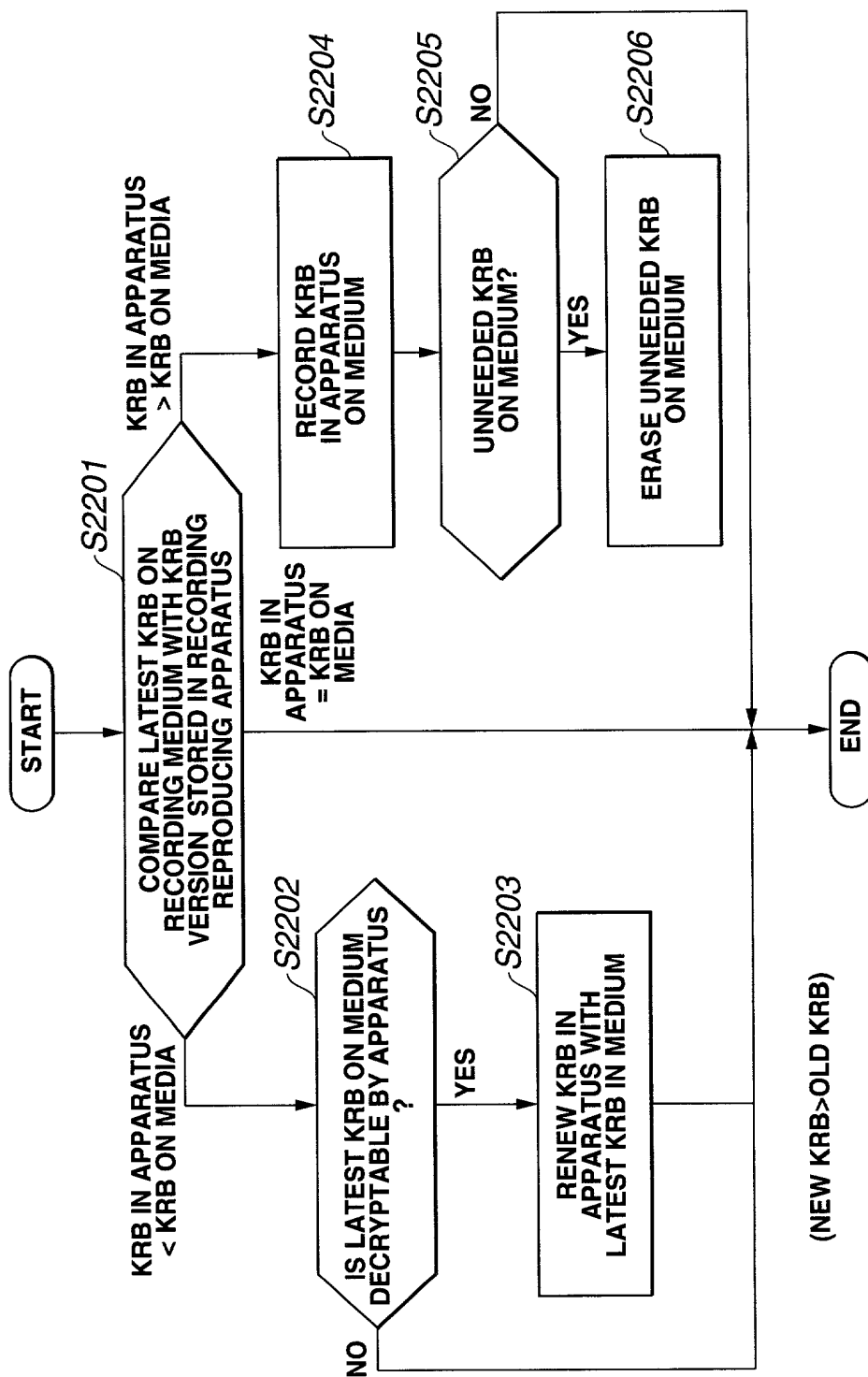
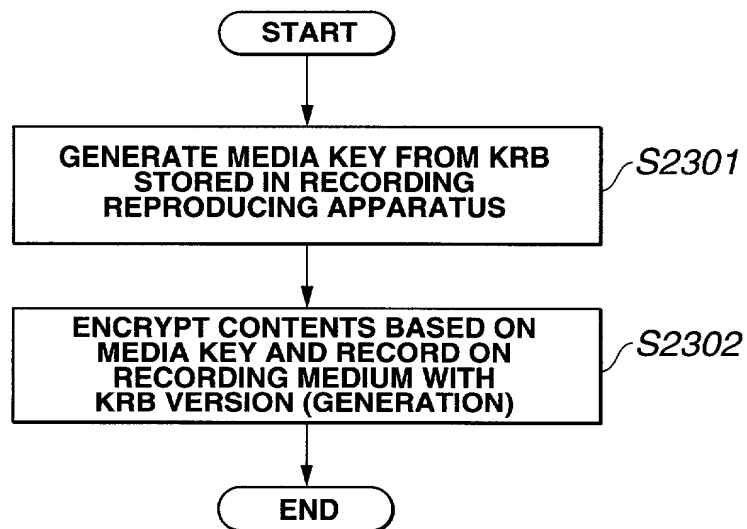
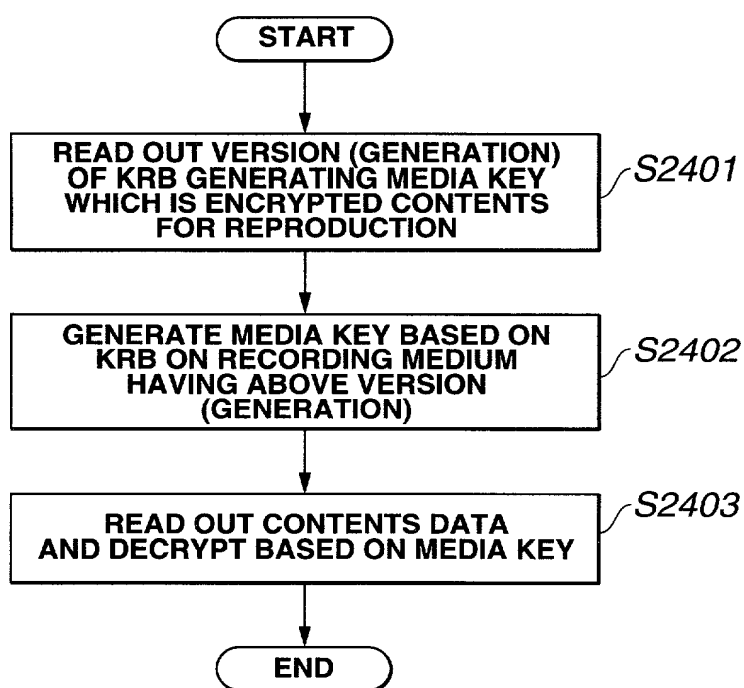


FIG.22

**FIG.23**

**FIG.24**



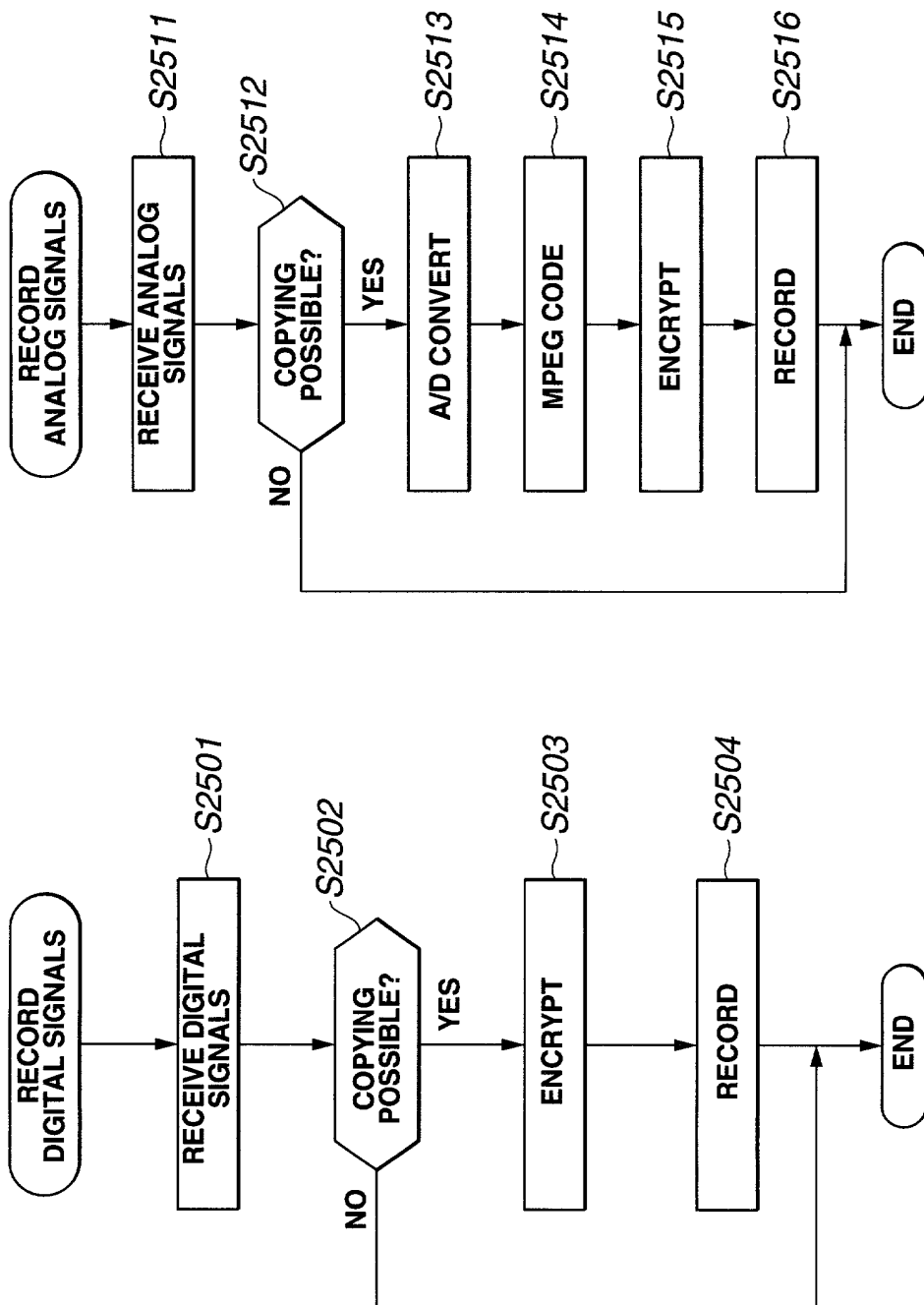


FIG.25B

FIG.25A

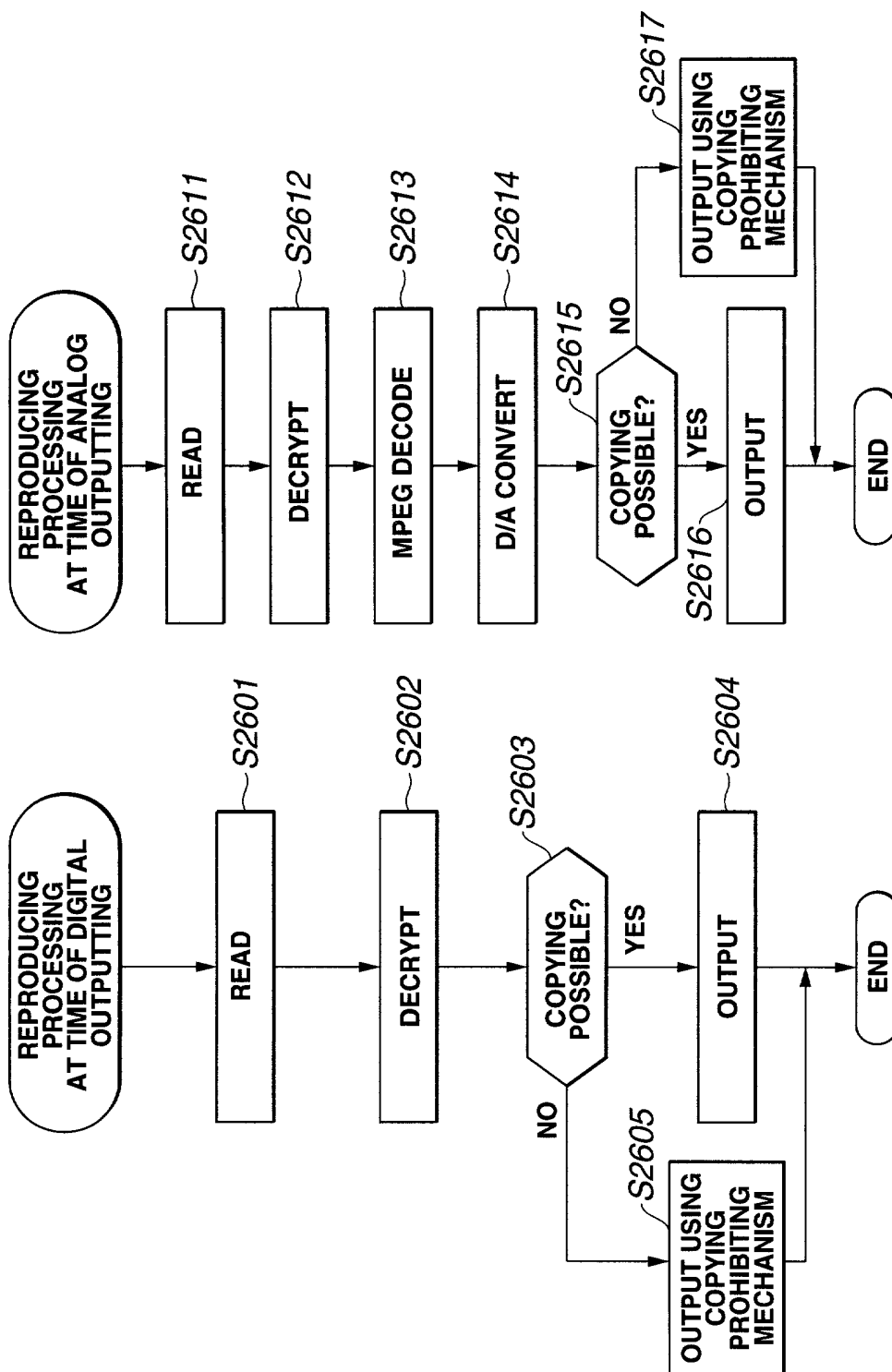


FIG.26B

FIG.26A

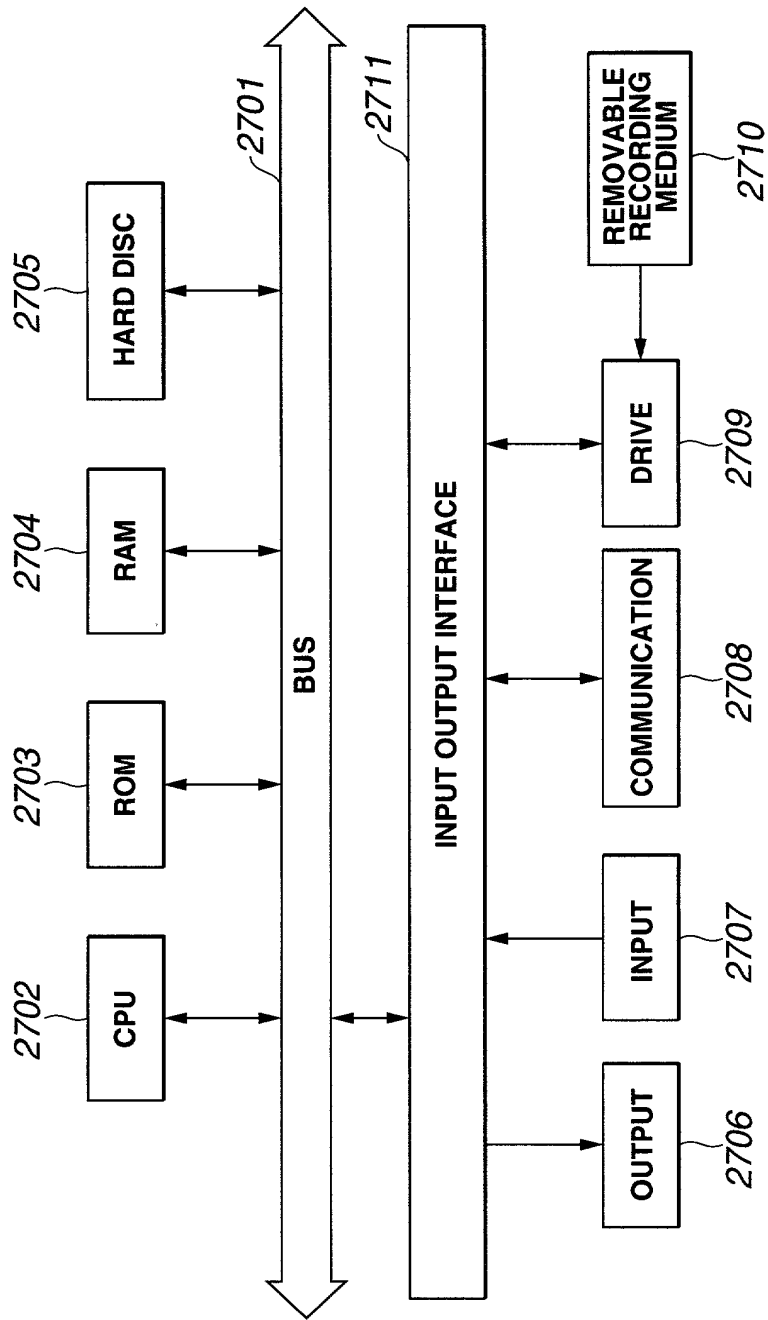


FIG.27